

COASTAL CONSERVANCY

Staff Recommendation

April 24, 2008

SALMON CREEK WATER CONSERVATION DESIGN AND DEMONSTRATION

File No. 07-107-01

Project Manager: Deborah Hirst

RECOMMENDED ACTION: Authorization to disburse up to two hundred ninety thousand dollars (\$290,000) to the Occidental Arts and Ecology Center to analyze water supply and demand in the Salmon Creek watershed; design a set of water conservation strategies to improve summer stream flows for juvenile salmonids and community water security; design and implement public outreach workshops and tours focused on water conservation strategies; implement water conservation demonstration programs tailored for small coastal communities and residents; and complete design and permitting for a large woody debris habitat enhancement project in the Salmon Creek Estuary in western Sonoma County.

LOCATION: Salmon Creek Watershed, Sonoma County

PROGRAM CATEGORY: Resource Enhancement

EXHIBITS

Exhibit 1: [Project Location and Site Map](#)

Exhibit 2: [Salmon Creek Estuary: Study Results and Enhancement Recommendation](#)

Exhibit 3: [Salmon Creek Watershed and Estuary Photographs](#)

Exhibit 4: [Salmon Creek Water Conservation Program Table](#)

Exhibit 5: [Letters of Support](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Chapter 6 of Division 21 (Sections 31251 et seq.) of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed two hundred ninety thousand dollars (\$290,000) to the Occidental Arts and Ecology Center (OAEC) to analyze water supply and demand in the Salmon Creek watershed; design a set of water conservation strategies to improve summer stream flows for juvenile salmonids and community water security; design and implement public outreach workshops and tours focused

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on water conservation strategies; implement water conservation demonstration programs tailored for small coastal communities and residents; and complete design and permitting for a large woody debris habitat enhancement project in the Salmon Creek Estuary in western Sonoma County, subject to the condition that prior to the disbursement of funds, the Executive Officer of the Conservancy shall approve in writing a detailed work program, budget, schedule, and any contractors and subcontractors to be employed.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the Project Selection Criteria and Guidelines, last updated by the Conservancy on September 20, 2007.
2. The proposed authorization is consistent with the purposes and objectives of Chapter 6 of Division 21 of the Public Resources Code, regarding the enhancement of coastal resources.
3. The project area is identified in the Sonoma County Local Coastal Program as requiring public action to restore existing resource protection problems.
4. The Occidental Arts and Ecology Center is a nonprofit organization existing under Section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code.”

PROJECT SUMMARY:

Staff recommends authorization to disburse two hundred ninety thousand dollars (\$290,000) to the Occidental Arts and Ecology Center (OAEC) to analyze water supply and demand in the Salmon Creek watershed; design a set of water conservation strategies to improve summer stream flows for juvenile salmonids and community water security; design and implement public outreach workshops and tours focused on water conservation strategies; implement water conservation demonstration programs tailored for small coastal communities and residents; and complete design and permitting for a large woody debris habitat enhancement project in the Salmon Creek Estuary in western Sonoma County.

The proposed project builds directly on the Conservancy’s comprehensive approach for Salmon Creek watershed planning which began in April of 2003 and produced the *Salmon Creek Estuary: Study Results and Enhancement Recommendation* report in 2006 (Exhibit 2). Key recommendations from the plan include addressing the need for increased spring and summer instream flows to provide improved aquatic habitat and installation of large wood habitat structures in the estuary for improved temperature and predator protection for seasonal Coho and steelhead rearing. The proposed project offers the Conservancy an excellent opportunity to utilize recently gathered water quality and quantity data, leverage local knowledge and well-established relationships in the watershed, and innovatively design and implement strategies to reduce human-demand on resources during the critical low flow season for the benefit of anadromous fish in the Salmon Creek watershed (Exhibit 3).

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OAEC will form a Conservation Task Force with community leaders and representatives from public agencies, including Sonoma County Water Agency and Bodega Water Company. Working with this task force, OAEC will collect and analyze data to identify priority user-groups with the greatest potential to decrease water consumption thereby increasing summer stream flows. From this information, the Task Force will develop conservation strategies which will be included in specific “Conservation Strategy Modules” (Exhibit 4). The Conservation Strategy Modules are anticipated to focus on storm water recharge, agricultural use, rural residential resource use, community/public water system collaboration, hospitality industry patron outreach, and community metering/billing recommendations. Each Module will consist of specific recommendations, community-based implementation steps and outreach materials to promote conservation behavior. This set of materials will be made readily available for adoption in other rural communities along the California coast facing similar pressures of growing development, water demand, and uncertain impacts of climate change. OAEC will also produce a final report summarizing the water supply and demand analysis conducted for development of the conservation strategies, including a review of current academic models forecasting a range of climate change impacts on local water supply to encourage discussion of this topic within the Task Force and the community at large.

The proposed project will also enable OAEC to implement demonstration water conservation programs utilizing the Modules in five Salmon Creek watershed communities: Bodega, Bodega Bay, Salmon Creek, Freestone and Occidental. OAEC anticipates providing demonstrations on public and private property working with the Task Force and a variety of citizens in the watershed. These programs will explore rain catchment, seasonal storage and storm water recharge approaches targeted for the greatest leverage on summer instream water flows based on assessments conducted for these five communities. One example will involve OAEC and the Bodega Fire Department collaborating on the design and permitting for a water storage tank and rain catchment system to demonstrate off-stream storage options that can effectively lessen the demand for stream water during the summer when fish populations are vulnerable to low flows. OAEC will raise awareness and encourage proactive conservation through two watershed-wide workshops, up to five community workshops, and tours of the demonstration projects working with the agency and community leaders in the Task Force.

OAEC will also inform the community about the need for proposed improvements to salmonid habitat at the mouth of Salmon Creek. Spanned by Highway 1 Salmon Creek Bridge, the highly visible estuary suffers from decades of excess sedimentation and lower water flows which have resulted in later seasonal breaching of the naturally occurring sand bar at the mouth of Salmon Creek. Coho salmon are no longer able to access the spawning and rearing habitat of Salmon Creek due to these anthropogenic impacts. The proposed project will provide for the design and permitting for 4 large woody debris structures in Salmon Creek Estuary. Construction of these habitat enhancement features will provide water-cooling shade as well as greatly needed protection from predators which gorge on juveniles in the shallow estuary leading up to the breach each year, as recommended by the findings of the *Salmon Creek Estuary Study (2006) completed with support from the Conservancy*. The project will enable permitting for the structures and a subsequent construction project is anticipated in partnership with the California Department of Fish and Game (DFG) and the National Atmospheric and Oceanic Administration’s National Marine Fisheries Program (NMFP).

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OAEC is a nonprofit organization founded in 1994 by a group of biologists, horticulturists, educators, activists, and artists seeking innovative and practical approaches to pressing environmental and economic issues. OAEC's programs combine research, demonstration, education, and organizing to develop collaborative, community-based strategies for positive social change and effective environmental stewardship. OAEC has extensive experience in watershed, fishery habitat, and biodiversity planning and implementation, and is currently working with multiple agencies and organizations including the Salmon Creek Watershed Council, DFG, Gold Ridge Resource Conservation District (GRRCD), and other local entities, and has successfully completed projects with support from the Conservancy.

Site Description:

The Salmon Creek watershed covers approximately 35 square miles and includes a series of six parallel tributaries that flow southward draining watersheds of mixed conifer forests and grasslands into the mainstem. The headwaters are near the town of Occidental, from where the stream flows down-slope in a southerly direction before it turns westward near Freestone, to enter the ocean through its estuary, about two miles north of Bodega Bay. Salmon Creek was once a thriving Coho salmon stream, but the last known sighting occurred in 1998. Steelhead are still found in the mainstem and some tributaries, but the system is far below historic numbers.

A naturally forming sand bar annually closes off the Salmon Creek Estuary from the ocean at the mouth of Salmon Creek. Consistent streamflows from the upper watershed in the spring and summer are necessary to maintain beneficial habitat conditions for the thousands of steelhead smolts that migrate downstream to rear in the estuary. Strong stream flows in the fall are needed to breach the sand bar and provide salt and freshwater exchange, as well as passage for anadromous fish.

Project History: The *Sonoma County Coastal Wetland Enhancement Plan*, adopted by the Conservancy in May of 1987, identified Salmon Creek as impaired and states that gully erosion, loss of ground-cover, bank erosion, loss of riparian habitat, and sedimentation are common in the watershed. Since that time, a coordinated set of projects have been funded by the Conservancy and partners in the Salmon Creek watershed to address sources of sediment from private ranch land on tributaries to Salmon Creek.

In 2006, OAEC and Salmon Creek Watershed Council completed the *Salmon Creek Estuary: Study Results and Recommendations* report, funded in part by the Conservancy. The report provides a history of Salmon Creek and the tremendous changes to the depth and functioning of the estuary which have resulted from human activities including timber harvesting, building and rebuilding of the Highway 1 bridge across Salmon Creek, water utility wells, and other uses of the stream flows in Salmon Creek. Among the factors affecting the potential for restoration of Coho to Salmon Creek are the need for enhancement of water quality through improved summer streamflows and adequate water flow for the sand bar to be breached at the time of year Coho would attempt to head upstream for spawning (October-December). The proposed project will implement recommendations from the Estuary study including the design and permitting of habitat structures for improved fish habitat in the estuary and the development and implementation of a water conservation program to maintain crucial summer flows for salmonids and other aquatic species in the watershed.

DFG's *Recovery Strategy for California Coho* (2004) identifies Salmon Creek as a priority watershed for protection of Steelhead and potential return of historic Coho populations.

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Consistent with the recommendations from the *Recovery Strategy*, the Salmon Creek Watershed Council (SCWC) and partners, including GRRCD and DFG, have conducted water quality monitoring and habitat improvement projects in the Salmon Creek watershed. GRRCD has mapped sediment risk priorities and has completed improvements on private property for the benefit of water quality and salmonid habitat in Dutch Bill and Salmon Creek with support from the Conservancy. The SCWC volunteer program has been operating 2.5 years and has been collecting data compatible with the Surface Water Ambient Monitoring Program of the Regional Water Quality Control Board. Automatic flow sensors were installed at five locations throughout the watershed in July 2007 and will run through August 2009. The University of California Cooperative Extension (UCCE) and GRRCD are also conducting base-line water quality monitoring starting in fall 2007 and running through fall of 2008 with Proposition 50 funds for the Salmon Creek Integrated Watershed Management Plan.

The proposed project will also benefit from the support of the highly effective network of local groups and nonprofit organizations focused on the health of Salmon Creek including the Salmon Creek Watershed Council, the GRRCD, the Harmony Union School District, Ocean Song Farm and Wilderness Center and the Bodega Land Trust and the agency partners involved with completing the Salmon Creek Integrated Watershed Management Plan, supported in part with Conservancy funds.

PROJECT FINANCING:

Coastal Conservancy	\$290,000
SWRCB	\$180,000
Department of Fish and Game	\$21,785
PCI, Dragonfly Engineering, OAEC (In-kind)	<u>8,065</u>
Total Project Cost	\$499,850

Funds for the project are anticipated to be derived from the Conservancy's FY05/06 allocation of Proposition 50 bond funds ("Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002"). Projects funded under Proposition 50 must comply with local watershed management plans and regional water quality control plans; this project complies with Proposition 50 as described in the "Consistency with Local Watershed Management Plan/Regional Water Quality Control Plan" section below. Consistent with the purposes of the funds to protect and restore coastal watersheds and ecosystem functioning, OAEC will design and permit a habitat enhancement project in Salmon Creek Estuary, and design water conservation strategies and implement water conservation programs in five communities in the Salmon Creek watershed.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

This project is consistent with Chapter 6 of Division 21 of the Public Resources Code Sections 31251 et seq. regarding the enhancement of coastal resources in the following respects:

Section 31251 of the Public Resources Code authorizes the Conservancy to award grants to local public agencies and nonprofit organizations for the purpose of enhancement of coastal resources. The proposed project will assist in the enhancement of the Salmon Creek watershed that has

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become degraded as anadromous fish habitat due to low water flows, increased erosion, sedimentation, and other anthropogenic impacts on the watershed. The water conservation program will focus on improving the present condition of the estuary and watershed by implementing conservation strategies developed with the water agencies, nonprofit organizations, and community leaders. Demonstration projects will be implemented in five communities utilizing the conservation strategy modules and targeting user-groups identified as having high potential to conserve summer stream flows in the Salmon Creek watershed.

Section 31251.2 authorizes the Conservancy to undertake projects that lie partly outside the coastal zone for the purpose of enhancing the natural or scenic character of watershed resources. The proposed project will enable OAEC to complete design and permitting for construction of large woody debris structures in Salmon Creek Estuary, develop a water conservation program and implement conservation strategies to enhance the natural character of Salmon Creek watershed within the coastal zone and in Bodega which falls just outside the coastal zone.

As required in Section 31252, the proposed project is consistent with the Sonoma County Local Coastal Program as described in the Consistency with Local Coastal Program Policies below.

Section 31253 enables the Conservancy to provide up to the total cost of any enhancement project. The Conservancy's contribution is matched by funds from the California Department of Fish and Game and the Occidental Arts and Ecology Center.

CONSISTENCY WITH CONSERVANCY'S 2007 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 5, Objective A** of the Conservancy's 2007 Strategic Plan, the proposed project will develop plans for the restoration and enhancement of coastal habitats including permitting for habitat structures in Salmon Creek Estuary and an off-stream storage tank for the Bodega Fire Department as a water conservation demonstration project.

Consistent with **Goal 6, Objective A** of the Conservancy's 2007 Strategic Plan, the proposed project will produce a plan to preserve and restore coastal watersheds by developing a community-based water conservation program, a study of water supply and demand, and design water conservation programs for five communities in the Salmon Creek watershed.

Consistent with **Goal 6, Objective B** of the Conservancy's 2007 Strategic Plan, the proposed project will implement the conservation strategies developed through the multi-agency task force in the proposed project, including outreach materials and activities to promote water conservation and preserve the Salmon Creek coastal watershed.

Consistent with **Goal 6, Objective C** of the Conservancy's 2007 Strategic Plan, the proposed project will work to ensure sufficient instream flow to support fish habitat in Salmon Creek watershed through agency coordination and public outreach.

Consistent with **Goal 8, Objective A** of the Conservancy's 2007 Strategic Plan, the proposed project will provide nonregulatory alternatives to reduce conflicts among competing uses in the Coastal Zone by bringing together stakeholders to design a water conservation program in order to benefit instream flows for salmonids while also meeting community water needs.

**CONSISTENCY WITH CONSERVANCY'S
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on September 20, 2007, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Support of the public:** The proposed project is supported by Congresswoman Lynn Woolsey, Assemblymember Patty Berg, and Supervisor Mike Reilly in addition to nonprofit organizations and public agencies including Trout Unlimited, DFG, GRRCD, Sonoma County Water Agency, Bodega Water Company and Bodega Volunteer Fire Department. See Exhibit 5 for Letters of Support.
4. **Location:** The proposed project would be located in Salmon Creek watershed including the community of Bodega which lies outside of the coastal zone, west Sonoma County.
5. **Need:** The proposed project would support development of a community-based water conservation program with permitting for demonstration projects that would not be possible without Conservancy support.
6. **Greater-than-local interest:** The proposed project will serve greater-than-local interest by producing a set of conservation related outreach materials which will be available for use in communities beyond western Sonoma County, and by providing open, public workshops and tours of the conservation program demonstration projects.

Additional Criteria

1. **Urgency:** The proposed project will address an urgent need to maintain adequate water in the Salmon Creek Watershed to support still remaining Steelhead and restore Coho habitat while raising awareness for the need to conserve water for the communities.
2. **Resolution of more than one issue:** The proposed project will plan and permit off-stream storage and habitat restoration demonstration projects while also preparing materials to promote water conservation in five communities.
3. **Leverage:** OAEC will leverage Conservancy support with \$209,850 in matching funds and thereby cover approximately 42% of the total project cost. See the "Project Financing" section above.
4. **Conflict resolution:** The proposed project will engage community leaders and agency members in designing six strategies for conserving water while also meeting the demands of multiple user groups in five communities and raising awareness of anticipated climate change issues in the watershed.
5. **Innovation:** The proposed project will build on existing data and additional research on water quantity, demand and conservation to make recommendations in partnership with agency and

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community leaders in a model program that may be shared for adoption in other coastal watershed communities across the state.

6. **Readiness:** Occidental Arts and Ecology Center is ready to implement this project and has the skills, experience and relationships necessary for the success of the project.
7. **Realization of prior Conservancy goals:** See “Project History” above.
8. **Return to Conservancy:** The proposed project will produce a set of water conservation outreach materials and recommendations designed for rural coastal communities which can be adopted in other California coastal communities. The project will also produce a water supply and demand report used in the development of the Conservation Strategy Modules.
9. **Cooperation:** The proposed project will involve collaboration with water agencies, local nonprofit organizations and other agencies to design and implement community-based conservation strategies and demonstration projects.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

The proposed authorization is consistent with the Sonoma County Local Coastal Program (LCP), certified in 1981 and revised on August 3, 1999, in the following respects: Subsection 9 (“Bodega Bay and Environs”) of Section III (“Resources: Environmental Resources”) of the LCP specifically references enhancement of the Salmon Creek watershed. It notes that local coastal planning and implementation may be conducted for the purposes of restoring and enhancing the estuary and marsh areas of Salmon Creek, and proposed that the riparian areas of the estuary and main stream may be evaluated and projects implemented that will enhance and restore the natural riparian resource. Efforts to maintain adequate water flows for the system are consistent with this section. Development of designs for fish habitat structures is a necessary step leading to the enhancement of the estuary for anadromous fish.

The LCP also identifies the need for public action and assistance to resolve existing problems in special resource areas, of which Salmon Creek is one. Priority policies are identified that relate to the protection of biological productivity and quality of coastal waters, streams, wetlands, and estuaries; special protection for species of biological or economic importance; the maintenance of marine resources; and the protection and restoration of riparian areas. Implementation of the proposed project will benefit estuary and coastal resources and is consistent with these policies.

CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/ REGIONAL WATER QUALITY CONTROL PLAN:

Projects funded by Proposition 50 must comply with local watershed management plans and regional water quality control plans where applicable. Because a local watershed plan does not exist for the Salmon Creek Estuary, the proposed project is exempt from such requirements; a regional plan, however, does exist. Section 2.1 of the North Coast Regional Watershed Initiative Chapter of the State Water Planning Strategic Plan includes Salmon Creek watershed in the Russian/Bodega Watershed Management Area (North Coast Regional Water Quality Control Board, February 2005). The plan identifies Salmon Creek as having low summertime flows and recognizes low flows as one of the ten primary water quality issues in the Russian/Bodega Watershed Management Area (WMA). The North Coast chapter provides goals to address water

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quality issues including protection of ground water (Goal 1) and protection surface water (Goal 2) for beneficial uses such as salmonid fishery values, protection of cold water fisheries (Goal 3), and coordination on water rights (Goal 8). The proposed project is consistent with the plan in that it will protect summer stream flows, promote conservation and enhance habitat for salmonids in the watershed.

COMPLIANCE WITH CEQA:

The proposed project is statutorily exempt from review under the California Environmental Quality Act (CEQA) pursuant to 14 California Code of Regulations Section 15262, in that it involves only planning studies, permit applications and evaluation for possible future actions which the Conservancy has not approved, adopted, or funded.

The development of the Conservation Strategy Modules and water supply and demand analysis are categorically exempt pursuant to Section 15306 as they consist of data collection, research, and resource evaluation.

The water conservation programs to be implemented through the proposed project involve dissemination of conservation program strategies and materials, outreach to promote conservation, and coordination for future actions. They do not have the potential to cause physical impacts to the environment, and thus do not constitute a project for the purposes of CEQA, under Sections 15061(b)(3) and 15378.

The Bodega Fire District water tank and Salmon Creek estuary habitat design and permitting components of the proposed project are categorically exempt pursuant to Section 15262, in that they consist of design work, permit applications and evaluation for possible future actions which the Conservancy has not approved, adopted, or funded.

Staff will file a Notice of Exemption upon authorization of the project.